

REMARKS

This Amendment, submitted in response to the Office Action dated June 16, 2005, is believed to be fully responsive to each point of rejection raised therein. Accordingly, favorable reconsideration on the merits is respectfully requested.

As a preliminary matter, claim 4 has been objected for including an informality. A proposed correction is set forth above.

Turning to the merits of the Office Action, claims 1-11 remain pending in the application and have been rejected under 35 U.S.C. § 102 as being anticipated by Kakutani (U.S.P. 6,356,358). Applicant respectfully submits the following arguments in traversal of the prior art rejections.

Applicant's invention relates to a printing method for multiple colored inks. Detailed descriptions of the background and exemplary embodiment are set forth in the February 7, 2005 Office Action at page 7. The Examiner is referred to these descriptions. Applicant would emphasize that a feature of the invention includes offsetting start positions for recording different colors in order to produce an image that does not include emphasized line areas or areas of reduced color reproduction.

Turning to the newly cited art, Kakutani relates to controlling an image print head by activating different nozzles of a print head to account for errors in nozzle or head manufacturing. The nozzles of the head can be driven according to a selected driving program. Abstract. The parameters for driving include the number of nozzles being driven and the sub-scan feed amount, for example. Col. 9, line 65 to col. 10, line 5. Figs. 7A-7B illustrate nozzle activation and subscan feed where the solid lines appearing to the right of a numbered circle correspond to lines

output by the activation of the nozzle as the head is moved in the main scan direction. At the conclusion of each main scan, the nozzle is moved four dots in the subscan direction to perform a subsequent scan in the main direction. The resulting program provides writing of lines in an effective area where lines are neither overwritten nor skipped. The control program in connection with the above operations is performed for a single color. See col. 2, lines 57-60.

The Examiner contends that Kakutani teaches each feature of independent claim 1. Applicant submits that the rejection is not supported for at least the following reasons.

Claim 1 describes that a recording includes offsetting in upstream or downstream in the sub-scanning direction, a start position for recording one of at least two colors in the sub-scanning direction. The Examiner relies on Figs. 7A-7B and 26 and the text at col. 11, line 6 to col. 12, line 55 to teach this aspect of claim 1. However, the Figs. 7A-7B and corresponding text describe a scan and nozzle activation for scanning of one array of nozzles, which shows no offsets for a start position for recording at least two colors. The resulting matrix of dots shown to the right side of Fig. 7A makes it clear that the scanning forms a regular pattern with no offset of any nozzle start position in any direction.

To the extent that Kakutani describes scan control for a color printer, there is no teaching that the start positions for different colors are offset from each other. In direct contrast, the claims and specification refer to the scan and nozzle activation for nozzles ejecting an identical color. See col. 2, lines 57-60. Kakutani does not specifically teach how the scan between different colors should be controlled. Therefore, claim 1 is patentable for at least these reasons.

To the extent that the Examiner relies on Fig. 26 for showing the offset as claimed, Applicant submits that Fig. 26 merely illustrates interlace scanning by a nozzle configuration.

Figure 26 also does not show any offset of a start recording position in any direction and further does not indicate the production of different colors in the scan.

Because claim 2 includes analogous though not necessarily coextensive features as claim 1, claim 2 is patentable for the reasons set forth above for claim 1. The remaining claims are patentable based on their dependency.

With further regard to claim 3, this claim describes the spot separation between different plural colors, such as by one, two or three spots. The Examiner cites Figs. 7A, 8A and 18-19 to teach this aspect. However, the rejection is improper since each of the cited figures represent the scan and nozzle control pattern of separate embodiments having different repeat scan criteria (s) and different nozzle pitch (k). The Examiner cannot combine different embodiments without a suggestion in the reference to do so. Ex parte Beuther, 71 USPQ2d 1313, 1316 (BPAI 2003). Moreover, as stated above, the various embodiments relate to control for a single color. Therefore, claim 3 is patentable for this additional reason.

Moreover, the cited reference Kakutani is applicable to dot recording apparatuses, such as ink jet printers, that record dots on the surface of a printing medium with a recording head having plural arrays of dot-forming elements (Col.28, lines 40-44). In Kakutani, skipping or overwriting of raster lines to be recorded are prevented by controlling the image print head and activating different nozzles for a single color.

The present invention discloses a recording head, such as laser head and thermal head, which projects a plurality of recording spots on a recording medium. In the present invention, different spot channels are used in the same place (the same recording line in the sub-scanning direction) to record a plurality of colors, so that the image unevenness is reduced.

AMENDMENT UNDER 37 C.F.R. § 1.111
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Claims 12-13 have been added to describe features of the invention more particularly.

In view of the above, Applicant submits that claims 1-13 are in condition for allowance. Therefore, it is respectfully requested that the subject application be passed to issue at the earliest possible time. The Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

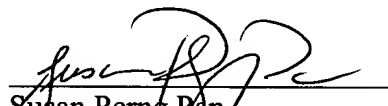
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